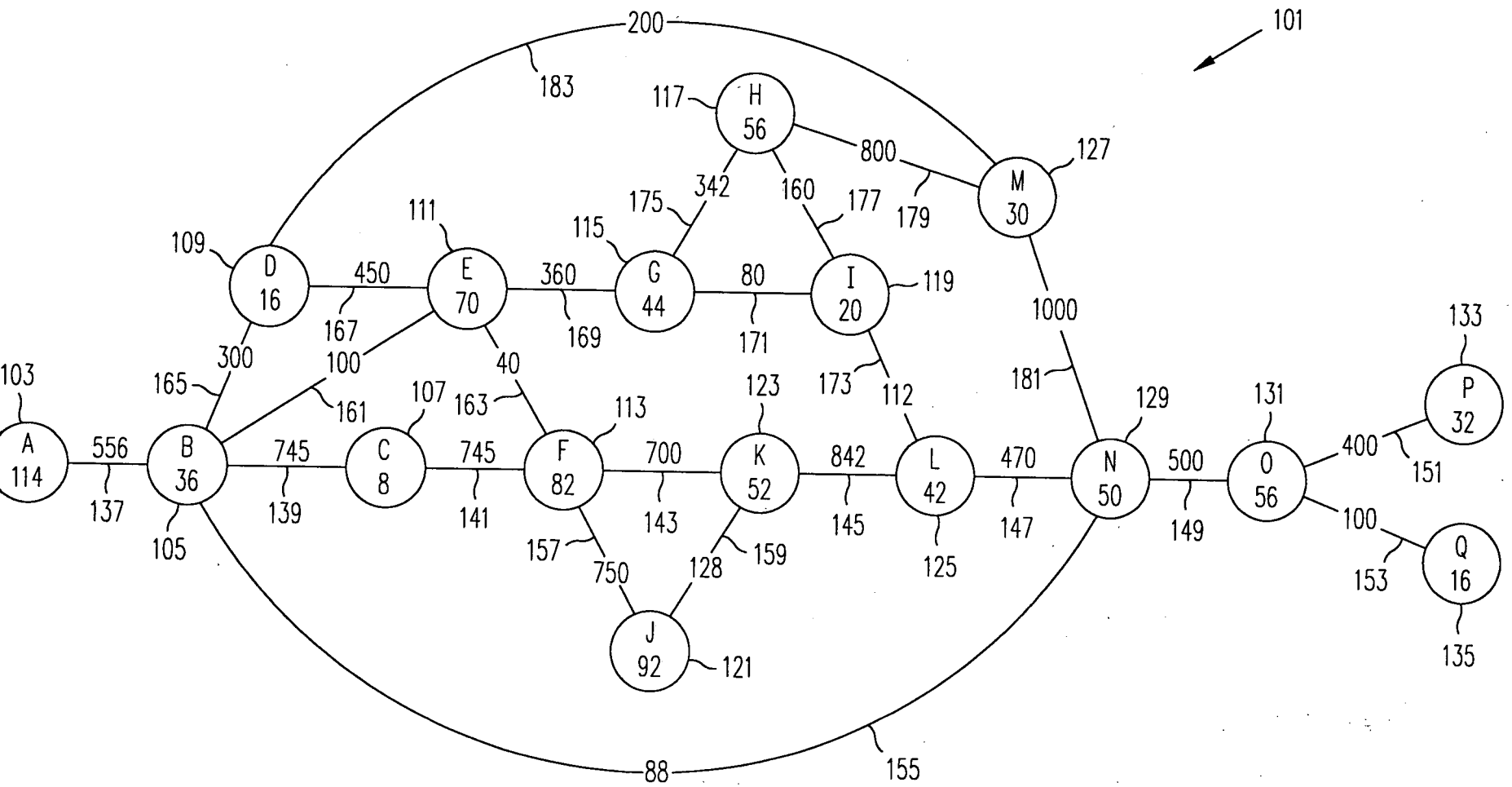
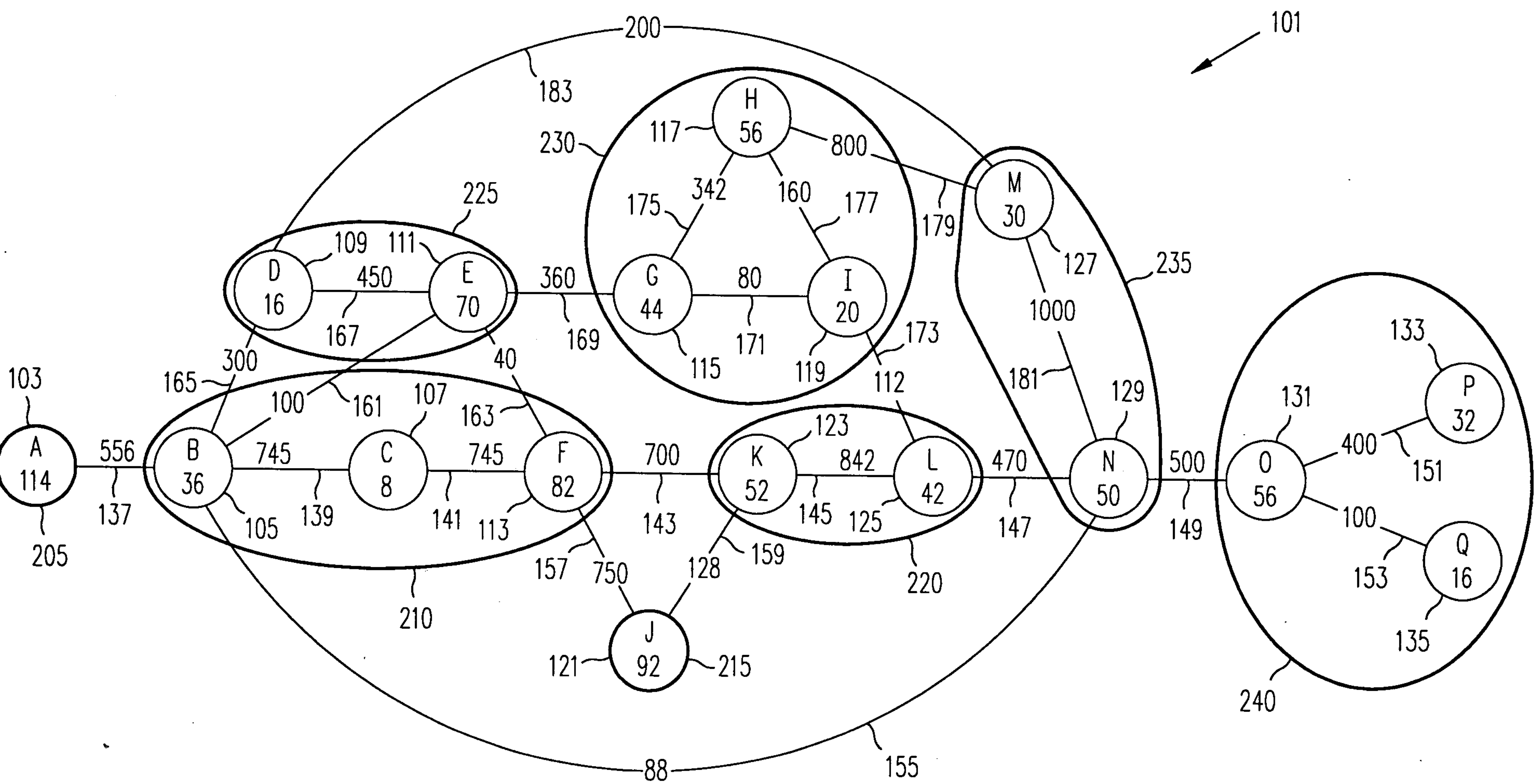


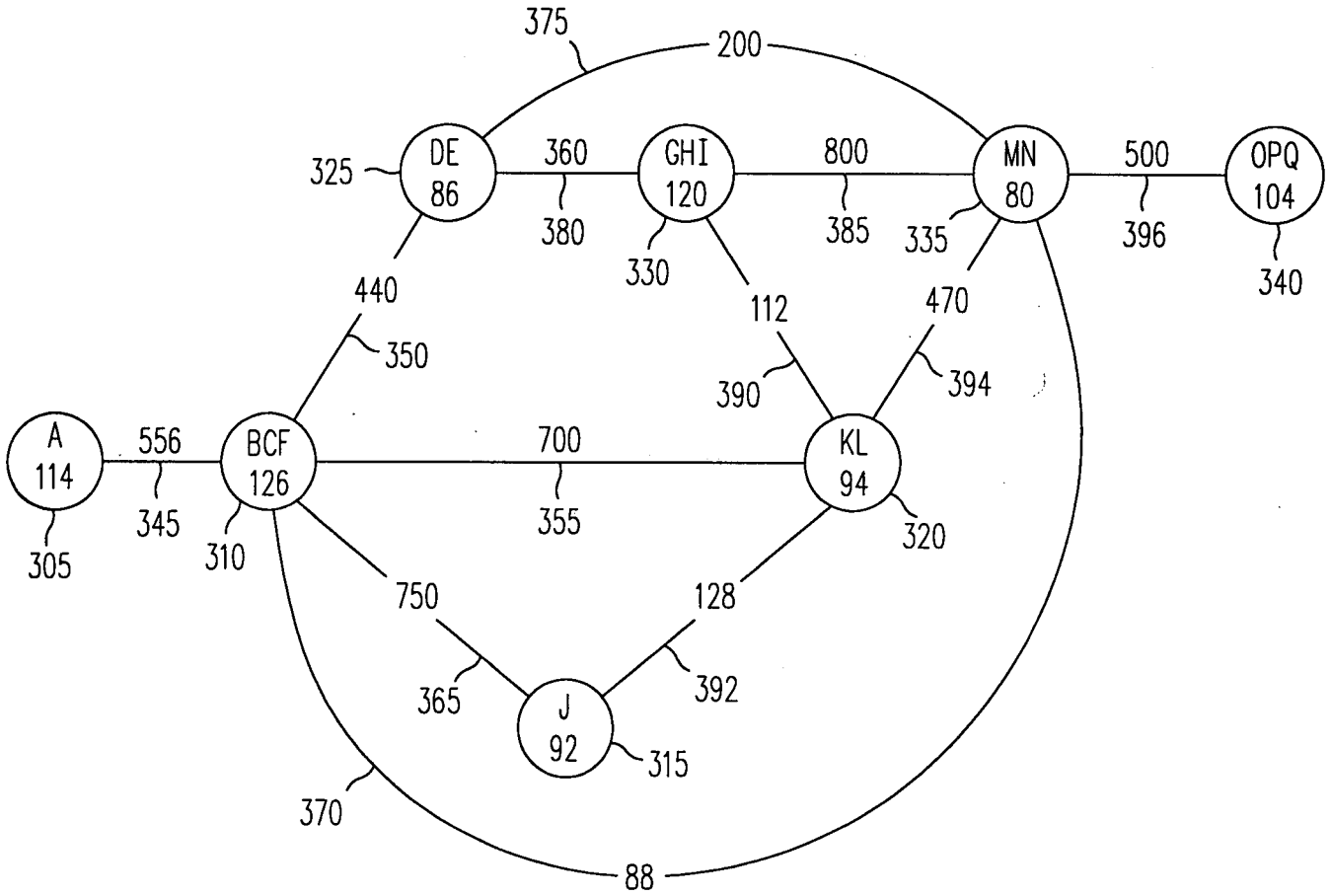
G_1 Cache line = 128 bytes = n_1

FIG. 1



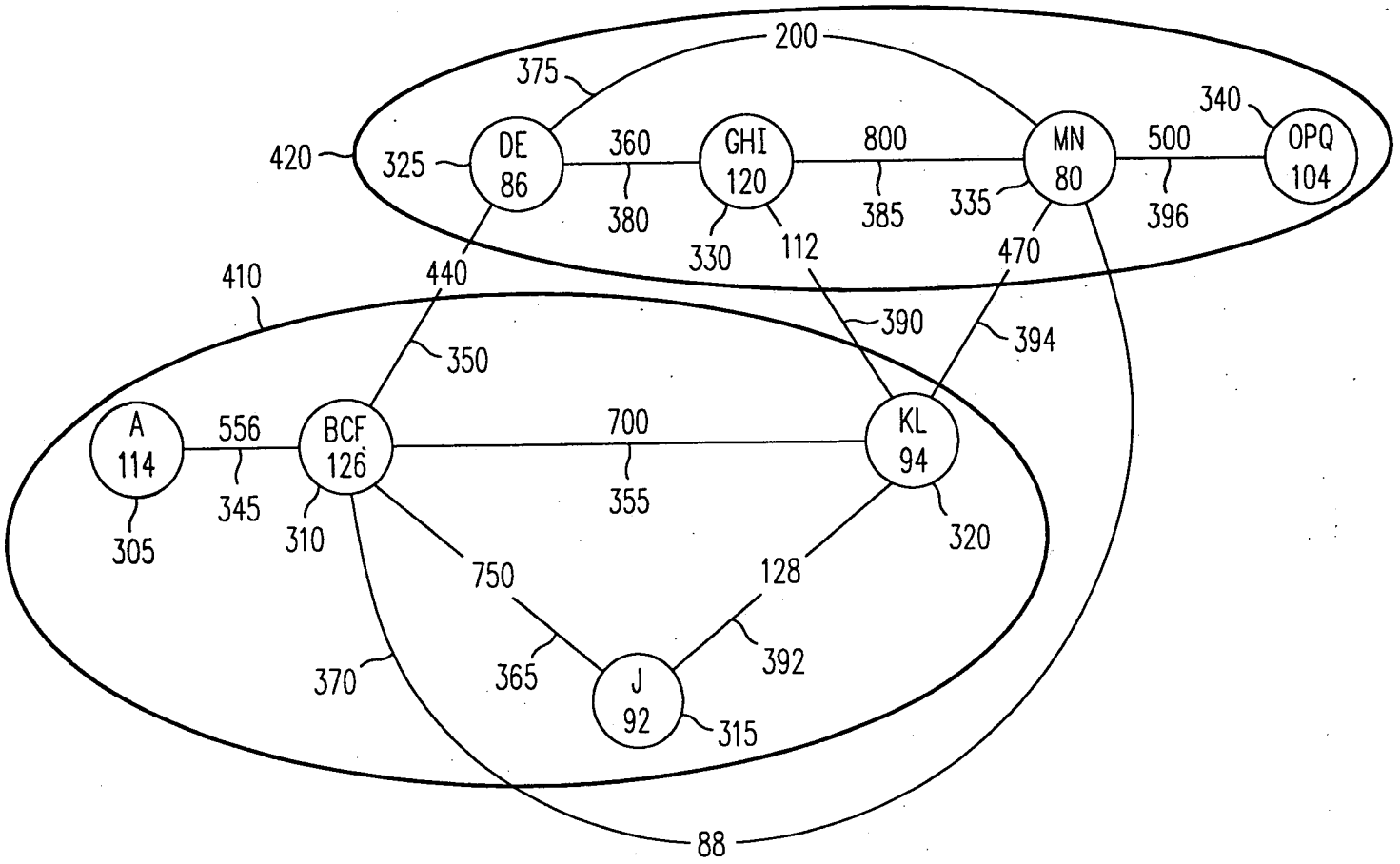
G_1 Cache line = 128 bytes = n_1

FIG. 2



G_2 n2 = 512 bytes (not realistic)

FIG. 3



G_2 n2 = 512 bytes (not realistic)

FIG. 4

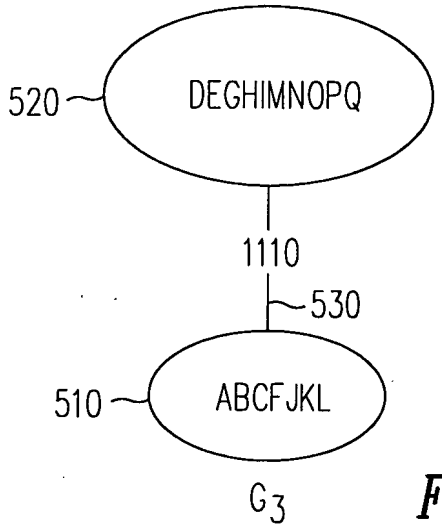

520
DEGHIMNOPQ
1110
530
510
ABCFJKL
G_3

FIG. 5

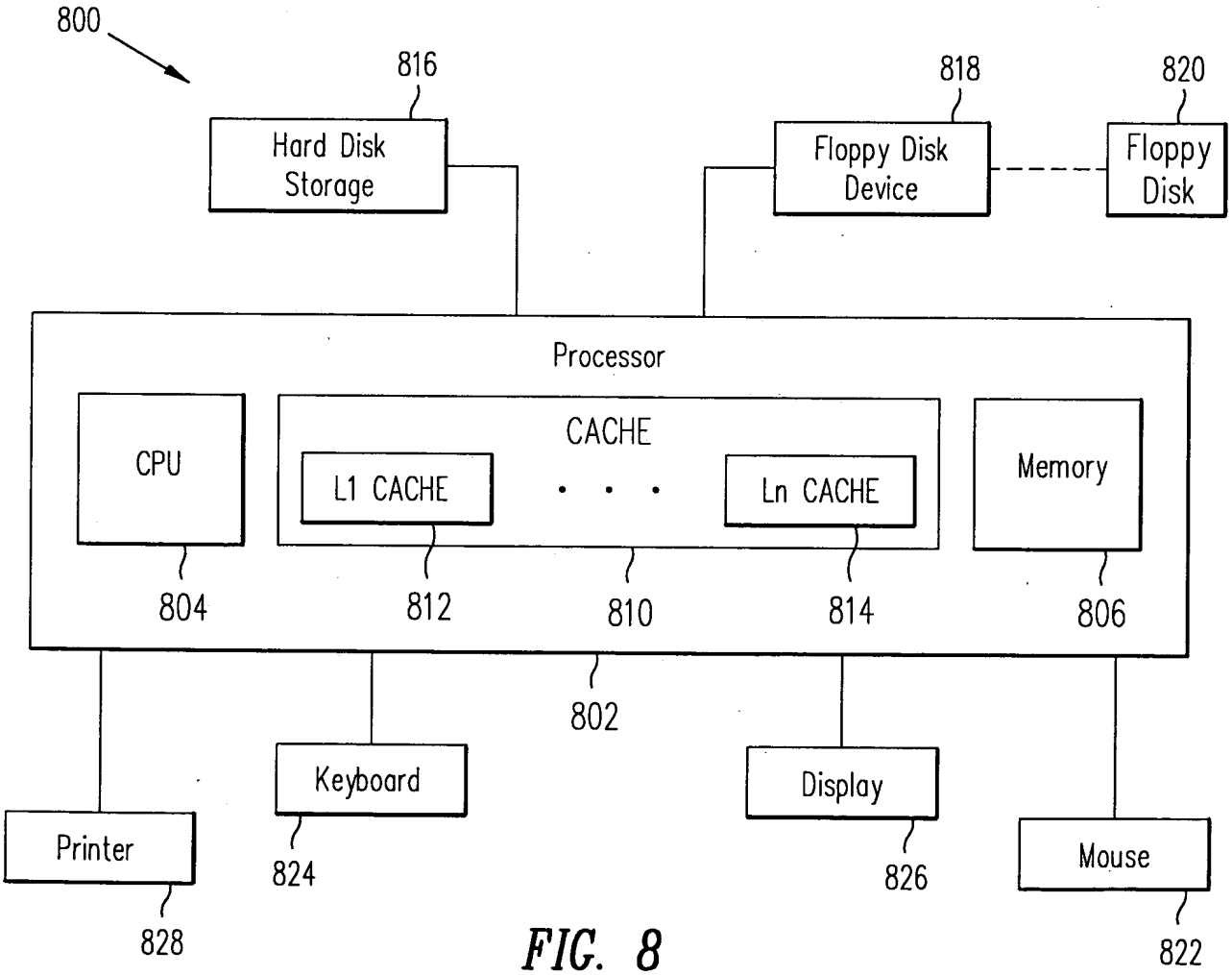

800
816
Hard Disk Storage
818
Floppy Disk Device
820
Floppy Disk
Processor
CPU
CACHE
L1 CACHE
Ln CACHE
Memory
804
812
810
814
806
802
Keyboard
Display
Printer
Mouse
824
826
828
822

FIG. 8

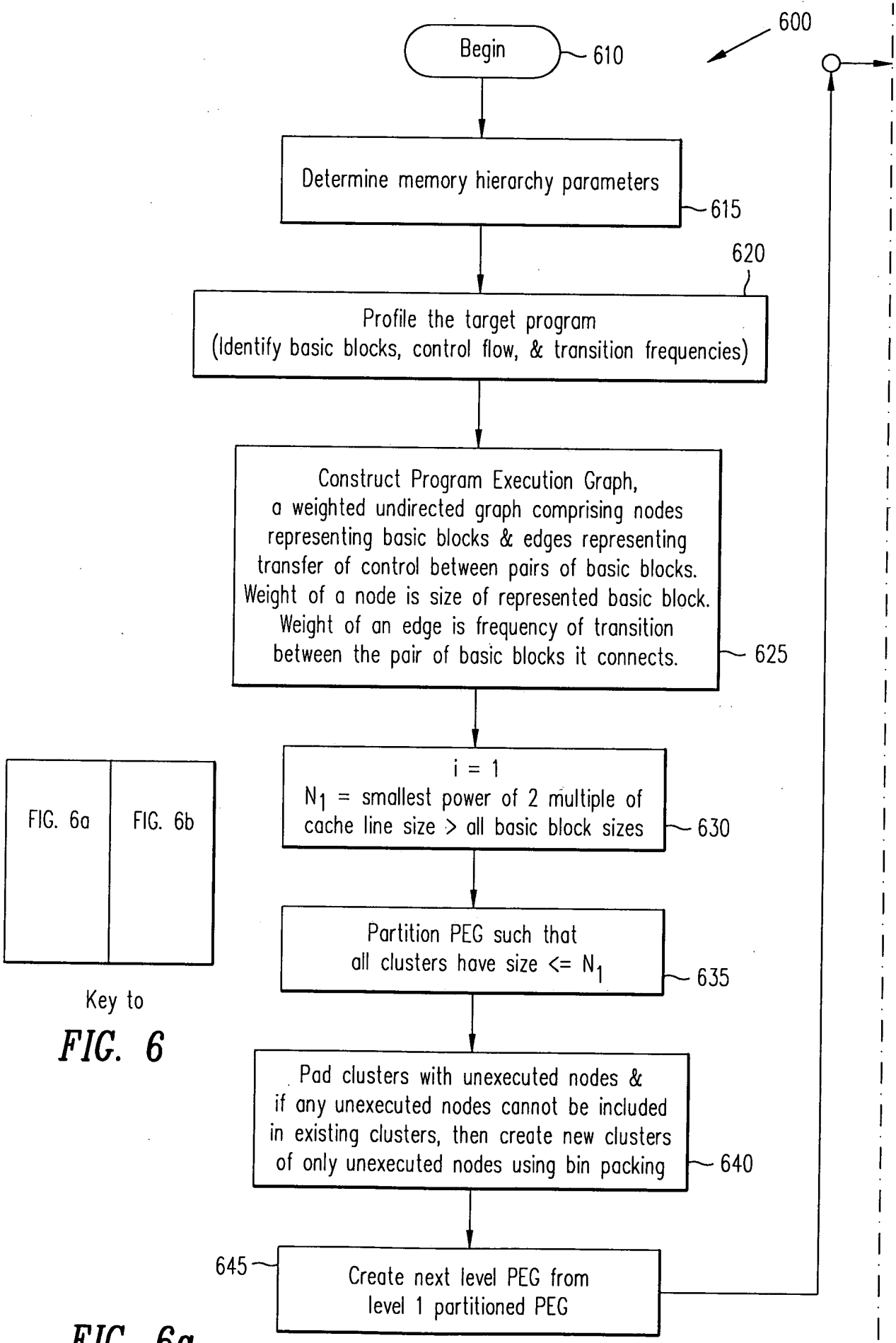


FIG. 6a

FIG. 6a | FIG. 6b

Key to

FIG. 6

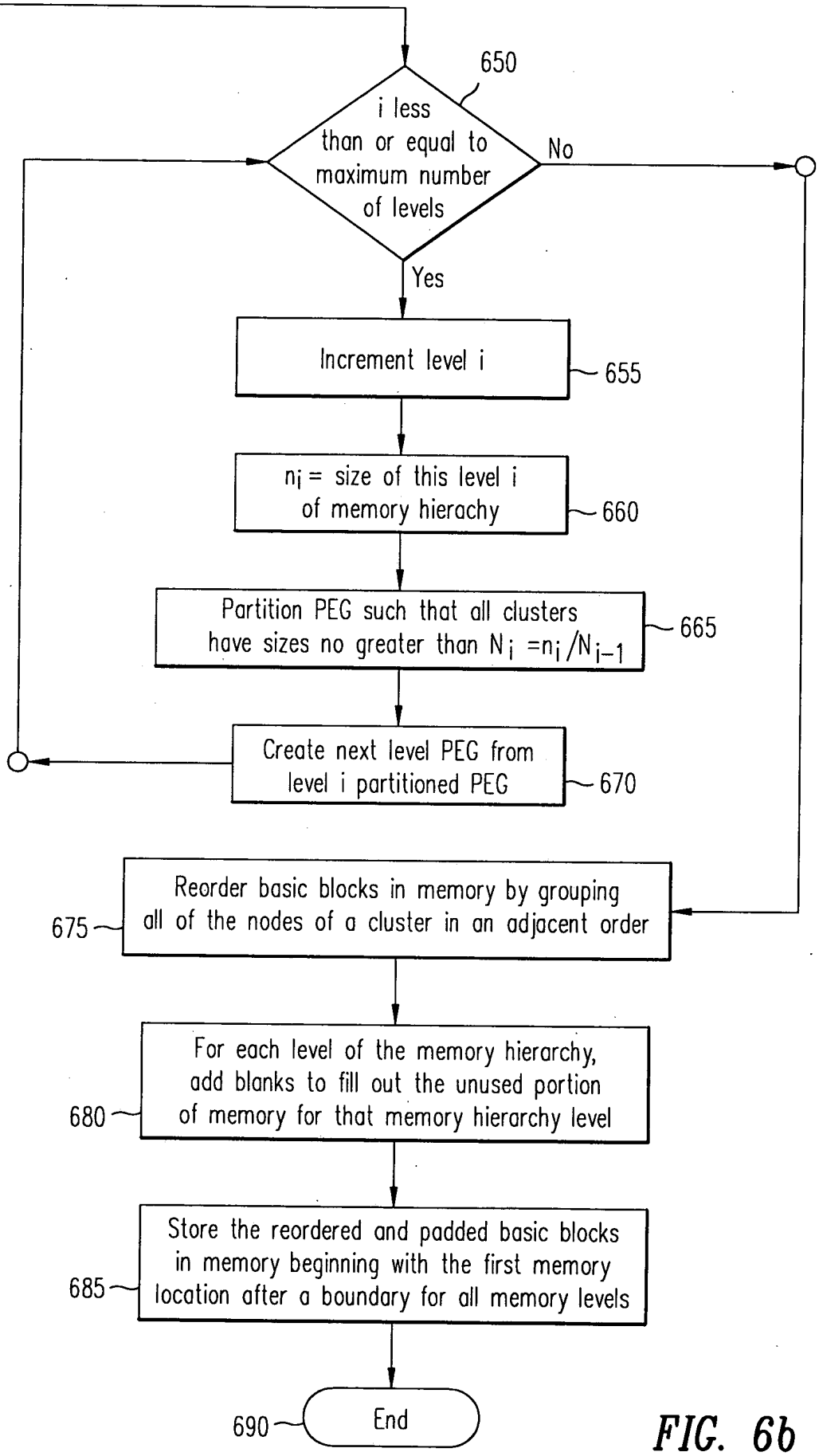

650
i less than or equal to maximum number of levels
No
Yes
Increment level i
655
n_i = size of this level i of memory hierachy
660
Partition PEG such that all clusters have sizes no greater than $N_i = n_i / N_{i-1}$
665
Create next level PEG from level i partitioned PEG
670
675
Reorder basic blocks in memory by grouping all of the nodes of a cluster in an adjacent order
680
For each level of the memory hierarchy, add blanks to fill out the unused portion of memory for that memory hierarchy level
685
Store the reordered and padded basic blocks in memory beginning with the first memory location after a boundary for all memory levels
690
End

FIG. 6b

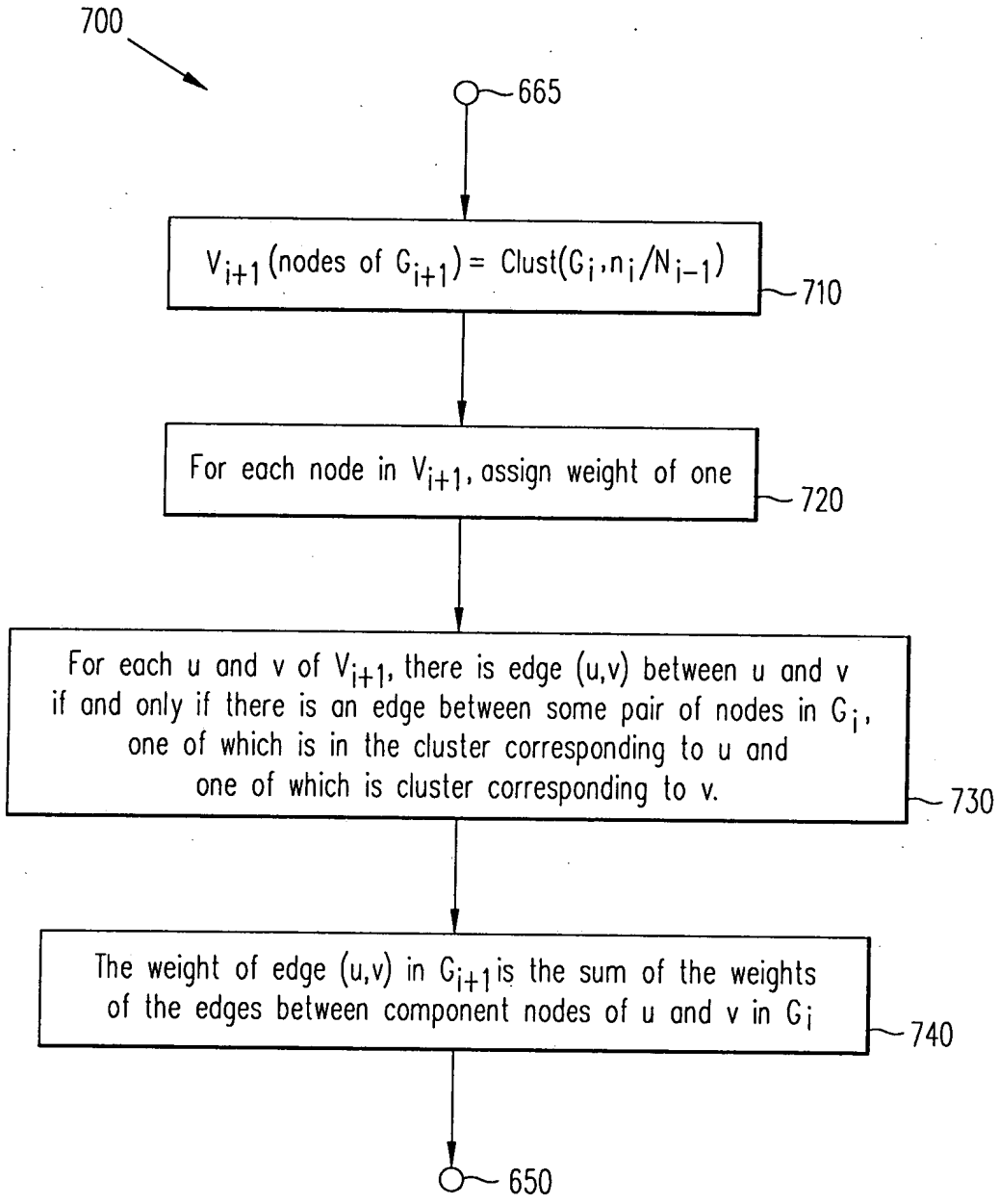

700
665
V_{i+1} (nodes of G_{i+1}) = Clust(G_i, n_i/N_{i-1})
710
For each node in V_{i+1}, assign weight of one
720
For each u and v of V_{i+1}, there is edge (u,v) between u and v if and only if there is an edge between some pair of nodes in G_i, one of which is in the cluster corresponding to u and one of which is cluster corresponding to v.
730
The weight of edge (u,v) in G_{i+1} is the sum of the weights of the edges between component nodes of u and v in G_i
740
650

FIG. 7